



Contents lists available at ScienceDirect

Fisheries Research

journal homepage: www.elsevier.com/locate/fishres



Consequences of catch-and-release angling on the physiology, behaviour and survival of wild steelhead *Oncorhynchus mykiss* in the Bulkley River, British Columbia

W.M. Twardek^{a,*}, T.O. Gagne^b, L.K. Elmer^a, S.J. Cooke^a, M.C. Beere^c, A.J. Danylchuk^b

^a Fish Ecology and Conservation Physiology Laboratory, Department of Biology and Institute of Environmental Science, Carleton University, 1125 Colonel By Dr., Ottawa, ON, Canada

^b Department of Environmental Conservation, University of Massachusetts Amherst, 160 Holdsworth Way, Amherst, MA 01003, USA

^c BC Ministry of Forests, Lands, Natural Resource Operations and Rural Development, Fisheries Branch, 3726 Alfred Ave, Smithers, BC, Canada

ARTICLE INFO

Handled by Chennai Guest Editor

Keywords

Recreational fishing
Rainbow trout
Migration
Freshwater
Salmon
Mortality

(b)(4) Copyright

(b)(4) Copyright

* Corresponding author.

E-mail address: WillTwardek@mail.carleton.ca (W.M. Twardek).

<https://doi.org/10.1016/j.fishres.2018.05.019>

Received 25 September 2017; Received in revised form 16 March 2018; Accepted 18 May 2018

Available online 29 May 2018

0165-7836/ © 2018 Elsevier B.V. All rights reserved.

(b)(4) Copyright

(b)(4) Copyright

(b)(4) Copyright



(b)(4) Copyright



(b)(4) Copyright

(b)(4) Copyright



(b)(4) Copyright

(b)(4) Copyright

(b)(4) Copyright

(b)(4) Copyright

(b)(4) Copyright